

AN ENTOMOLOGICAL TRIP TO COPPER CLIFF, ONT.

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In June, 1892, in company with Mr. Fletcher, who was anxious to obtain *Erebia Discoidalis*, Kirby, I made a visit to the famous Sudbury mining region. Leaving Ottawa on the 15th, at 3.40 p.m., we arrived at Copper Cliff at 5 a.m. the following day. As the hour was so early we tried a little collecting before calling on our friend, Mr. J. D. Evans, manager of the copper and nickel mines, who had kindly invited us to stay with him. Everything was rather moist, however; and but little could be found at this early hour except a few examples of *Banchus flavescens*. After breakfast, and some entomological discussions with our host, we sallied forth again, but showers interfered materially with collecting, and we were able to do little more than gain an idea of the character of our surroundings. The district, which is situated about long. 81 W., lat. 46.30 N., is in general somewhat similar in character to the description given by Dr. Hamilton, in a recent paper, of Sparrow Lake, from which it is distant about 150 miles in a north-westerly direction, while it is about 30 miles north of the Georgian Bay. This region is much broken with small hills and hummocks of Laurentian formation, which formerly were apparently covered by heavy forests of pine and other conifers, but which have been swept by fires, and now are sparsely clothed by a second growth of shrubs and small deciduous trees which are springing up among the burnt stumps and logs; while in numerous places the bare glaciated knobs of rock are exposed. Between the hills are occasional small areas of seemingly fertile soil, but usually these low places are swampy and contain the plants common to such moist habitats. The entrance to the Copper Cliff mine faces on a somewhat level piece of ground of moderate area, which has been converted into an artificial *solfatara*, where the glare of molten slag and the fumes of burning sulphur strongly remind one of a volcanic district. In the immediate vicinity of the roasting grounds, and for a radius of several hundred yards around, especially in the direction of the prevalent winds, vegetation has been completely destroyed by the sulphuric acid, with which every shower drenches the ground. Beyond the denuded area the effects are visible for a long distance in the discoloration and bleaching of the plants, which sometimes produce not unpleasant shades of colour or variegations of foliage. Near the mine a small stream flows down through a beaver-meadow, and further up it has been dammed to supply water for the mine. The stream is fringed with alder, willow,

cornel, etc., and the meadow, which has been caused by a former beaver-dam, is covered with coarse grass and sedges, and bordered by small spruce and tamarack.

The afternoon was brighter and Mr. Evans drove us down to Sudbury (about five miles), so that we might visit with him the locality where he had captured five examples of the desired *Erebia* on 12th May, 1889 (*Ottawa Naturalist*, Vol. III., p. 154.) It was of course a month later, but he was almost certain that he had seen one of these butterflies flit past the Sudbury Railway Station a week before, and we had hopes that we might obtain the coveted insect. Along the road every butterfly that flitted on ahead was anxiously watched, but each proved to belong to some commoner species. We collected many fine examples of *Phyciodes Nycteis*, which was very abundant and in perfect condition. We also obtained, under the loose bark of a stump, a pupa of this species which transformed to the imago during our visit.

From Sudbury we walked across the country in the direction of the Stobie mine; the ground being, as usual, rough and largely covered with ferns and brambles, interspersed with clumps of small poplars, birches, chokecherries, etc. No trace of *Erebia* could be found, but smaller and less remarkable insects occurred in fair numbers, including several species of saw-flies, of which *Tenthredo semirufa* was the most abundant. Black-flies (*Simulium*) were, however, so numerous and voracious that they made collecting very difficult, while they were ably assisted by the deer-flies (*Chrysops*.) I have had opportunities of becoming acquainted with such intrusive insects from the Atlantic to the Pacific, but I think that the black-flies of Sudbury could take first place for persistence of attack. Having separated from my companions, who carried the bottle of mosquito-oil, I was finally obliged to beat a retreat to the village, where my gory visage excited the risibilities of some of the inhabitants and induced them to size me up as a "tenderfoot." One mining individual went so far as to make some personal reflections on my "everlastingly chewed up" appearance, for which he afterwards apologized by stating that he had recently suffered in the same way himself, and he offered to confirm his unintention of giving offence, by inviting me to inspect the nearest poison (not fly) dispensary, hoping probably to find out if I was prospecting, or interested in mining areas.

Returning to Copper Cliff we spent a very pleasant and profitable evening examining the fine collections made by Mr. Evans in this district,

as well as those which he had gathered at Trenton. The next morning he advised us to go up along the beaver-meadow, and this proved to be the most interesting and profitable collecting ground which we found. Along the short wood-road leading up along the brook to the meadow, *Carterocephalus Mandan* occurred abundantly and a few other butterflies were not uncommon, while coleoptera and hymenoptera were moderately plentiful. In the meadow itself we captured a number of interesting species, of which the rarest was *Nematoplus collaris*, which has not been recorded from Canada. Four examples were taken of this beetle and an equal number of *Dolichosoma foveicolle*, a species which at Ottawa has only been once taken, in a similar habitat. *Nemias episcopalis* was common with *Anisoticta strigata*, and several examples of *Ditylus cæruleus* occurred on low plants. *Orsodacna atra* was exceedingly abundant, and variable both in size and colour, and several species of Lampyridæ were more or less common. In the sluggish stream which divided the meadow, *Donacia proxima* was as usual on lily-pads, while *D. distincta*, *D. subtilis* and *D. emarginata*? were swept from the fringing sedges and shrubs. Of hymenoptera the most conspicuous was *Trichosoma triangulum*, upon small willows and spiræas. Some fifty or more were taken, which, with few exceptions, were males. Along the borders of the adjacent wood several fine ichneumons were taken, including males of *Collocentrus Pettitii*, of which Mr. Fletcher subsequently obtained females (CANADIAN ENTOMOLOGIST, Vol. XXV., page 30.) A pleasant breeze tempered the heat and kept off the flies, so that we were enabled to collect most pleasantly.

The afternoon was spent upon the adjacent hillocks, among the stumps and debris of the old burnt woods, which formerly had yielded to Mr. Evans large numbers of longicorns, etc., but which were then too old to be longer tenanted by such insects. Several of the larger Pimplinæ occurred here, such as *Coleocentrus*, *Ephialtes*, *Euxorides*, *Xylonomus* and *Ecthrus*. Hibernated specimens of *Vanessa antiopa* and some skippers were the only butterflies observed. Willows yielded numerous examples of the pretty little weevil *Rhynchites cyanellus*, also *Orchestes ephippiatus*, *O. subhirtus*, *Lepyrus geminatus*, etc.; spiked maples in bloom furnished several elaters and some small bees and other hymenoptera, while a fine male of *Agrilus acutipennis* was captured on birch. In the evening we made, under the guidance of our host, an inspection of the extensive smelting works, and were extremely interested in the

several operations required to produce the large cakes of copper and nickel known as *matte*. The molten slag poured out on the dump-heaps lit up the country for miles around and produced a very weird effect all night. Mr. Fletcher had to leave for Ottawa by the night train, but I remained two days longer and went over the same routes and somewhat extended the area of investigation, but did not materially enlarge our list of captures. A species of *Diodontus* (which I have not yet been able to place with any of the described forms) was somewhat common, generally at rest on leaves of maples, but not many specimens were collected as the foliage was too damp for sweeping and the insects were too nimble to be easily taken with the fingers alone. *Oryssus Sayi* was taken upon a burnt pine tree, so that possibly it may infest this tree as well as the maple and poplar.

The last day of my stay was so wet that no collecting could be done. Mr. Evans did indeed go with me in the morning to the beaver-meadow, where we waded about through the wet grass, but the rain became so heavy that all the insects disappeared, except mosquitoes, which were exceptionally numerous and aggressive. My time was, however, not unprofitably or unpleasantly spent, as fuller opportunity was afforded for further examination of the extensive collection of beautifully prepared specimens which has been gathered by Mr. Evans, and in which are many rare and interesting species. Each evening numerous moths were taken upon the study window screen, to which they were attracted by a light arranged so as to serve for that purpose as well as for the preparation of accumulated material.

To give some idea of the insects which may be taken in two or three days at the season in question (middle of June), I append a list of the species we collected, with the hope that at no late date our esteemed friend and co-worker, Mr. Evans, will publish his promised catalogue of the large and valuable collection he has made in this little-known region. No attempt was made to collect *Lepidoptera* other than butterflies, or *Diptera* (except a few of the larger species), while *Orthoptera* and *Neuroptera* were too few in number to be worth recording :—

LEPIDOPTERA.

Papilio Turnus, Linn. Common.

Pieris Napi, Esp., winter form *Oleracea-hymnalis*, Harris. Several.

Colias Philodice, Gdt.

Argynnis Myrina, Cram. Common in beaver-meadow.

- Argynnis Bellona*, Fab.
Phyciodes Tharos, Dru. Common along wood-road.
Phyciodes Nycteis, Doub-Hew. Common along roads.
Grapta Progne, Cram. One specimen.
Vanessa Antiopa, Linn. Hibernated individuals.
Neonympha Eurytris, Fab.
Lycena Pseudargiolus, Bd.-Lec ; winter form *Lucia*, Kirby. Not rare, flitting over bushes of spiked-maple in flower.
Lycena Comyntas, Gdt.
Feniseca Tarquinius, Fab.
Chrysophanus Hypophleas, Bdv.
Carterocephalus Mandan, Edw. Abundant in wood-roads and openings.
Pamphila Zabulon, Bd.-Lec. In open woods.
Pamphila Zabulon, Lin., aberrant ♀ *Pocahontas*, Scud.
Pamphila Peckius, Kirby. In grassy localities.
Pamphila Mystic, Edw. Along borders of woods.
Nisoniades Icelus, Lint Common along wood-road.
Nisoniades Brizo, Bd.-Lec.
Eudamus Pylades, Scud. Border of woods.

HYMENOPTERA.

TENTHREDINIDÆ—*Cimbex americana*, Leach, var. *La Portei*, St. Farg. ♂ ; *Trichiosoma triangulum*, Kirby ; *Hylotoma McLeayi*, Leach ♀ ; *H. clavicornis*, Fab., ♀ ; *Nematus corniger*, Norton ; *N. pallicornis*, Norton ; *Dolerus aprilis*, Norton ; *D. sericeus*, Say ; *Monophadnus tibie*, Norton, ♂ ; *Monostegia maculata*, Norton ; *Selandria flavipes*, Norton ; *Macrophya flavicoxae*, Norton ; *M. contaminator*, Prov., ♀ ; *M. n. sp.* (?) ♀ ; *M. trisyllaba*, Norton ; *M. varia*, Norton, ♂ ; *Pachyprotasis delta*, Prov. ; *Taxonus rufipes*, Harr., ♂ ; *Strongylogaster apicalis*, Say, ♂ ♀ ; *S. soriculatus*, Prov., ♀ ; *S. annulosus*, Norton, ♀ ; *Tenthredo rufipes*, Say, ♀ ; *T. verticalis*, Say, ♀ ; *T. semirufa*, Norton, ♀ ; *T. signata*, Norton? ♂ (probably the ♂ of *semirufa*) ; *T. n. sp.* (?) ♀ ; *T. ruficolor*, Norton (?) ♀ ; *Pamphilius ocreatus*, Say, ♀.

UROCIDÆ—*Oryssus Sayi*, Westwood, ♀.

CYNIPIDÆ—*Figites (Figitodes, Ash.) inermis*, Prov. ♂.

ICHNEUMONIDÆ—*Ichneumon malacus*, Say, ♀ ; *I. acerbus*, Cress., ♂ ; *I. subcyaneus*, Cress., ♂ ; *I. parvus*, Cress., ♂ ; *I. canadensis*, Cress., ♀ ; *I. nigrovariegatus*, Prov. (?) ; *I. terminalis*, Cress., (?) ; *Amblyteles stadaconensis*, Prov, ♂ ; *A. perluctuosus*, Prov., ♀.

Phygadeuon n. sp., ♀; *Cryptus proximus*, Cress., ♀; *C. nuncius*, Say, ♀; *C. canadensis*, Prov., ♂; *C. n. sp.*, ♀; *Pezomachus sp. (canadensis)*, Cress., ? ♂).

Exochilum fuscipenne, Norton, ♀; *Anomalon anale*, Say, ♀; *Paniscus albotarsatus*, Prov., ♂ ♀; *Campoplex sp.*; *Casinarina n. sp. (?)*, ♀; *Limneria*, 3 sp. not determined; *Banchus flavescens*, Cress., ♀; *B. canadensis*, Cress., ♂; *B. borealis*, Cress., ♀; *B. spinosus*, Cress. (?), ♀.

Mesoleptus, n. sp. (?); *Mesoleius sp. (?)*; *Tryphon analis*, Cress., ♂; *T. tibialis*, Cress., ♂; *Errormenus crassus*, Cress., ♀; *E. pedalis*, Cress., ♀; *E. (?) n. sp. (?)*; *Cteniscus, sp.*; *Exyston clavatus*, Cress., ♀; *Exochus laevis*, Cress., ♂; *Orthocentrus sp.*

Coleocentrus Pettitii, Cress., ♂ ♀; *Ephialtes sp. (near gigas, Walsh)*; *Pimpla conquisitor*, Say, ♂ ♀; *P. tenuicornis*, Cress., ♂ ♀; *P. rufopictus*, Cress., ♀ var.; *Glypta erratica*, Cress., ♀; *Meniscus superbus*, Prov., ♀; *Phytodietus vulgaris*, Cress., ♀ var.; *Euxorides americanus*, Cress., ♂ ♀; *Xylonomus stigmaferus*, Say, ♂ ♀; *Odontomerus mellipes*, Say, ♀; *Ecthrus abdominalis*, Cress., ♀.

BRACONIDÆ.—*Bracon longicauda*, Prov.; *Rhogas parasiticus*, Norton; *Meteorus vulgaris*, Cress.; four undetermined species.

CHALCIDIDÆ.—*Eurytoma, sp.*; one Pteromalid undetermined.

PROCTOTRYPIDÆ.—*Isobrachium, sp. (?)*.

CHRYSIDIDÆ.—*Omalus leviventris*, Cress.; *Elampus speculum*, Say; *Notozus viridicyaneus*, Norton; *Chrysis cærulans*, Fab.

POMPIDIDÆ.—*Agenia pulchripennis*, Cress.

PEMPHREDONIDÆ.—*Cemonus inornatus*, Say; *Pemphredon concolor*, Say; *Passalæcus mandibularis*, Cress.; *Diodontus sp.*

CRABRONIDÆ.—*Rhopalum pedicellatum*, Pack.; *Crabro bellus*, Cress., 3 ♂; *C. atrifrons*, Cress. (?), ♂; *C. effossus*, Pack., ♀; *C. 6-maculatus*, Say; *C. maculipennis*, Smith, ♂; *C. sp.*, undetermined ♂.

EUMENIDÆ.—*Eumenes fraternus*, Say, ♂; *Odynerus arvensis*, Sauss., ♀ ♂; *O. leucomelas*, Sauss., ♂; *O. tigris*, Sauss., ♂; *O. albophaleratus*, Sauss., ♀; *O. debilis*, Sauss., ♂.

VESPIDÆ.—*Polistes pallipes*, St. Farg., ♀; *Vespa maculata*, Linn., ♀; *V. scelestæ*, McFar., ♀.

ANDRENIDÆ.—*Protopis basalis*, Smith, ♂; *Sphecodes dichroa*, Smith, ♂; *Halictus coriaceus*, Smith (?), ♀; *H. confusus*, Smith (?), ♀; *Andrena hilaris*, Smith (?), ♀.

APIDÆ.—*Nomada bisignata*, Say, ♀; *Osmia lignaria*, Say, ♀; *O. simillima*, Smith, ♀; *Apathus Ashtoni*, Cress., ♀; *Bombus ternarius*, Say, ♀.

COLEOPTERA.

CARABIDÆ.—*Pterostichus lucublandus*, Say; *P. patruelis*, Dej. *Bradycellus neglectus*, Lec. (?) or n. sp.

HYDROPHILIDÆ.—*Helophorus lineatus*, Say.

STAPHYLINIDÆ.—*Listrotrophus cingulatus*, Grav.; *Stenus* sp., a small specimen since lost; *Anthobium pothos*, Mann.

COCCINELLIDÆ.—*Anisosticta strigata*, Thunb.; *Nemias episcopalis*, Kirby; *Hippodamia 5-signata*, Kirby; *H. 13-punctata*, Linn.; *Coccinella trifasciata*, Linn.; *C. transversalis*, Muls.

CRYPTOPHAGIDÆ.—*Loberus impressus*, Lec.

DERMESTIDÆ.—*Byturus unicolor*, Say.

DASYLLIDÆ.—*Cyphon variabilis*, Thunb.

ELATERIDÆ.—*Elater pullus*, Germ.; *E. luctuosus*, Lec.; *E. nigricans*, Germ.; *E. rubricus*, Say; *E. apicatus*, Say; *Agriotes oblongicollis*, Melsh.; *Dolopius lateralis*, Esch.; *Melanotus castanipes*, Payk.; *M. sp.* (probably a small form of preceding); *Limonius æger*, Lec.; *Campylus denticornis*, Kirby; *Sericosomus incongruus*, Lec.; *Corymbites tarsalis*, Melsh.; *C. triundulatus*, Rand.; *C. æripennis*, Kirby; *C. metallicus*, Payk.; *C. n. sp.* ? (one specimen.)

THROSCIDÆ.—*Throscus constrictor*, Say.

BUPRESTIDÆ.—*Dicerca divaricata*, Say; *Melanophila longipes*, Say; *Agrilus acutipennis*, Mann.; *Brachys ærosa*, Melsh.

LAMPYRIDÆ.—*Plateros modestus*, Say; *Ellychnia corrusca*, Linn.; *Podabrus diadema*, Fab.; *P. modestus*, Say; *P. piniphilus*, Esch.; *F. lateralis*, Lec.; *Silis percomis*, Say; *Telephorus fraxini*, Say (?) ; *T. rectus*, Melsh. (?) ; *T. tuberculatus*, Lec.; *Malthodes* sp.

MALACHIDÆ.—*Dolichosoma foveicolle*, Kirby.

CLERIDÆ.—*Hydnocera difficilis*, Lec.

LUCANIDÆ.—*Platycerus depressus*, Lec.

SCARABÆIDÆ.—*Aphodius hamatus*, Say.

CERAMBYCIDÆ.—*Clytanthus ruricola*, Oliv.; *Achmæops proteus*, Kirby; *Leptura sexmaculata*, Linn.; *L. chrysocoma*, Kirby; *L. sphaericollis*, Say; *L. mutabilis*, Newm.

CHRYSOMELIDÆ.—*Donacia proxima*, Kirby; *D. distincta*, Lec.; *D. subtilis*, Kunze; *D. emarginata*, Kirby (?) ; *Orsodacna atra*, Ahr.;

Syneta ferruginea, Germ.; *Pachybrachys hepaticus*, Melsh.; *Diachus catarius*, Suff.; *Chrysomela Bigsbyana*, Kirby; *Gastroidea polygoni*, Linn.; *Lina lapponica*, Linn.; *Gonioctena pallida*, Linn.; *Adimonia cavicollis*, Lec.; *A. rufosanguinea*, Say; *Ædionychis quercata*, Fab. (?); *Haltica bimarginata*, Say; *H. ignita*, Ill.; *Crepidodera Helxines*, Linn.

CISTELIDÆ—*Hymenorus pilosus*, Melsh.

LAGRIIDÆ—*Arthomacra ænea*, Say.

CEDEMERIDÆ—*Ditylus cæruleus*, Rand.

MORDELLIDÆ—*Anaspis atra*, Lec.; *A. flavipennis*, Hald.; *A. rufa*, Say.

ANTHICIDÆ—*Nematoplus collaris*, Lec.

PYROCHROIDÆ—*Schizotus cervicalis*, Newm.

RHYNCHITIDÆ—*Rhynchites cyanellus*, Lec.; *Rhynchites* (?) *sp.* (a small brownish weevil).

ATTELABIDÆ—*Attelabus rhois*, Boh.

CURCULIONIDÆ—*Lepyryus geminatus*, Say; *Pissodes affinis*, Rand.; *Hylobius confusus*, Kirby; *Erycus puncticollis*, Lec.; *Anthonomus signatus*, Say; *A. sp. nov.*? ("marked exactly like *scutellatus*, but more elongate," Dr. Hamilton); *Orchestes pallicornis*, Say; *O. niger*, Horn; *O. ephippiatus*, Say; *O. subhirtus*, Horn; *Elleschus bipunctatus*, Linn.; *Coliodes tenuipes*, Lec.; *Ceutorhynchus decipiens*, Lec.

SCOLYTIDÆ—*Dryocates septentrionis*, Mann.; *Hylurgops pinifex*, Fitch.

HEMIPTERA.

HETEROPTERA.—*Eurygaster alternatus*, Say; *Perillus exaptus*, Say; *Podisus modestus*, Dallas; *Neottiglossa undata*, Kirby; *Cosmopepla carinifex*, Fab.; *Euchistus fissilis*, Uhl.; *Corizus punctiventris*, Dallas; *Cymus augustatus*, Stal., common; *Miris affinis*, Reut.; *Lygus flavonotata*, Prov. (?); *Camptobrochis grandis*, Uhl.; *Anthocoris musculus*, Say; *Aradus rectus*, Say; *Aradus* (two species unnamed); *Coriscus inscriptus*, Kirby.

HOMOPTERA.—*Pubilia concava*, Say; *Cixius stigmatus*, Say; *Stenocranus dorsalis*, Fitch; *Lephyronia quadangularis*, Say; *Bythoscopus sobrius*, Walker; *B. variabilis*, Fitch; *B. pruni*, Prov. (?); *Idiocerus alternatus*, Fitch; *Agallia novella*, Say; *Tettigonia hieroglyphicus*, Say; *Thamnotettix subcupreus*, Prov.

SUMMARY.

The species enumerated in the foregoing lists are as follows:—Lepidoptera (Butterflies) 21, Hymenoptera 125, Coleoptera 102, Hemiptera 27, making a total of 275.